WHAT IS CLAIMED IS:

1. A system comprising a processor circuit with executable instructions to determine whether a dissociated ventricular tachyarrhythmia exists using an indicator of variability of time intervals, in which each time interval is between a first time indicative of a ventricular depolarization and a second time indicative of a mitral valve closure.

2. The system of claim **1**, further comprising:

a heart signal sensing circuit, comprising a depolarization detector circuit to detect first times indicative of ventricular depolarizations occurring during cardiac cycles;

a mitral valve closure sensor circuit, to detect second times indicative of mitral valve closures;

a timer circuit, coupled to the heart signal sensing circuit and to the mitral valve closure sensor circuit, to measure time intervals between one of the first times and one of the second times within the same cardiac cycle; and

a memory circuit, coupled to the timer circuit, the memory circuit configured to store the time intervals.

3. The system of claim **1**, in which the depolarization detector circuit comprises:

an amplifier circuit; and

at least one of a level detector circuit and a peak or level detector circuit, coupled to the amplifier circuit.

4. The system of claim **1**, in which the mitral valve closure sensor circuit comprises an accelerometer.

5. The system of claim **1**, in which the mitral valve closures sensor circuit comprises a microphone.

6. The system of claim **1**, in which the processor circuit includes executable instructions to compute at least one of a variance, a range, and a standard deviation of the time intervals to determine whether a dissociated tachyarrhythmia exists.

7. The system of claim **1**, in which the mitral valve closure sensor circuit includes a highpass filter circuit.

8. The system of claim **1**, in which the mitral valve closure sensor circuit comprises a differentiator circuit.

9. The system of claim **1**, in which the mitral valve closure sensor circuit comprises a lowpass filter circuit.

10. The system of claim **1**, in which the mitral valve closure sensor circuit comprises a peak or level detector circuit.

11. The system of claim **1**, in which the mitral valve closure sensor circuit comprises a sensor, including at least one of an accelerometer and a microphone, to provide a sensor signal.

12. The system of claim **11**, in which the mitral valve closure sensor circuit comprises:

means, coupled to the sensor, for removing a baseline component of the sensor signal;

a lowpass filter circuit, coupled to the means for removing the baseline component of the sensor signal, to filter the sensor signal; and

a peak or level detector circuit, coupled to the lowpass filter circuit.

13. The system of claim **11**, in which the mitral valve closure sensor circuit comprises a morphology template comparator including a template to compare the sensor signal against to detect the second times indicative of mitral valve closures.

14. The system of claim **1**, further comprising a lead coupled to the heart signal sensing circuit.

15. The system of claim **1**, further comprising a communication circuit to communicate an indication of whether a dissociated ventricular tachyarrhythmia exists to a remote location.

16. The system of claim **1**, further comprising a remote interface to receive the indication of whether the dissociated ventricular tachyarrhythmia exists from the communication circuit.

17. The system of claim **1**, in which the executable instructions to determine whether a dissociated ventricular tachyarrhythmia exists also use an indicator of variability of amplitudes of mitral valve closures.

18. A system comprising:

a heart signal sensing circuit, comprising a depolarization detector circuit to detect first times indicative of ventricular depolarizations occurring during cardiac cycles;

a mitral valve closure sensor circuit, to detect second times indicative of mitral valve closures;

a timer circuit, coupled to the heart signal sensing circuit and to the mitral valve closure sensor circuit, to measure time intervals between one of the first times

and one of the second times within the same cardiac cycle;

a memory circuit, coupled to the timer circuit, the memory circuit configured to store the time intervals; and

a processor circuit, coupled to or including the memory circuit, the processor circuit including executable instructions to determine whether a dissociated tachyarrhythmia exists using the time intervals.

19. The system of claim **18**, in which the depolarization detector circuit comprises:

an amplifier circuit; and

at least one of a level detector circuit and a threshold detector circuit, coupled to the amplifier circuit.

20. The system of claim **18**, in which the mitral valve closure sensor circuit comprises an accelerometer.

21. The system of claim **18**, in which the mitral valve closures sensor circuit comprises a microphone.

22. The system of claim **18**, in which the processor circuit includes executable instructions to compute at least one of a variance, a range, and a standard deviation of the time intervals to determine whether a dissociated tachyarrhythmia exists.

23. The system of claim **18**, in which the mitral valve closure sensor circuit includes a highpass filter circuit.

24. The system of claim **18**, in which the mitral valve closure sensor circuit comprises a differentiator circuit.

25. The system of claim **18**, in which the mitral valve closure sensor circuit comprises a lowpass filter circuit.

26. The system of claim **18**, in which the mitral valve closure sensor circuit comprises a peak or level detector circuit

27. The system of claim **18**, in which the mitral valve closure sensor circuit comprises a sensor, including at least one of an accelerometer and a microphone, to provide a sensor signal.

28. The system of claim **27**, in which the mitral valve closures sensor circuit comprises:

means, coupled to the sensor, for removing a baseline component of the sensor signal;

a lowpass filter circuit, coupled to the means for removing the baseline component of the sensor signal, to filter the sensor signal; and

a peak or level detector circuit, coupled to the lowpass filter circuit.

29. The system of claim **27**, in which the mitral valve closure sensor circuit comprises a template to compare the sensor signal against to detect the second times indicative of mitral valve closures.

30. The system of claim **18**, further comprising a lead coupled to the heart signal sensing circuit.

31. The system of claim **18**, further comprising a communication circuit to communicate an indication of whether a dissociated ventricular tachyarrhythmia exists to a remote location.

32. The system of claim **18**, further comprising a remote interface to receive the indication of whether the dissociated ventricular tachyarrhythmia exists from the communication circuit.

33. The system of claim **1**, in which the executable instructions to determine whether a dissociated ventricular tachyarrhythmia exists also use an indicator of variability of amplitudes of mitral valve closures.

34. A method comprising:

acquiring a first signal to obtain first times indicative of ventricular depolarizations;

acquiring a second signal to obtain second times indicative of mitral valve closures occurring during respective cardiac cycles of the ventricular depolarizations;

measuring time intervals, each of the time intervals measured between one of the first times and one of the second times within the same cardiac cycle; and

determining whether a dissociated ventricular tachyarrhythmia exists using the time intervals.

35. The method of claim **34**, in which the acquiring the first signal includes acquiring an electrical heart signal.

36. The method of claim **34**, in which the acquiring the second signal comprises acquiring an acceleration signal.

37. The method of claim **34**, in which the acquiring the second signal comprises acquiring a sound signal.

38. The method of claim **34**, in which the determining whether a dissociated

ventricular tachyarrhythmia exists comprises computing a statistic using the time intervals.

39. The method of claim **38**, in which the determining whether a dissociated ventricular tachyarrhythmia exists further comprises comparing the statistic to a predetermined threshold value.

40. The method of claim **38**, in which the computing the statistic comprises computing a range of values of the time intervals.

41. The method of claim **38**, in which the computing the statistic comprises computing a variance of the time intervals.

42. The method of claim **38**, in which the computing the statistic comprises computing a standard deviation of the time intervals.

43. The method of claim **34**, in which the acquiring the second signal comprises attenuating a baseline component of the second signal.

44. The method of claim **43**, in which the attenuating the baseline component of the second signal includes highpass filtering the second signal.

45. The method of claim **43**, in which the attenuating the baseline component of the second signal includes differentiating the second signal.

46. The method of claim **45**, further comprising lowpass filtering the second signal.

47. The method of claim **45**, in which the acquiring a second signal to obtain the

second times includes detecting peaks of the second signal after the attenuating the baseline component and the lowpass filtering of the second signal.

48. The method of claim **34**, in which the acquiring a second signal to obtain the second times includes comparing at least a portion of the second signal to a template.

49. The method of claim **34**, further comprising communicating an indication of whether a ventricular tachyarrhythmia exists to a remote location.

50. The method of claim **34**, further comprising:

measuring amplitudes of the second signal at the second times; and

in which the determining whether a dissociated ventricular tachyarrhythmia exists also includes using the amplitudes.